TAPIMMUNE

Leader in Immunotherapy for Women's Cancers

Corporate Overview
April 2017

NASDAQ: TPIV

Safe Harbor Statement

Certain statements contained herein are forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements in this document include, but are not limited to, statements relating to long-term stability, the Company's plan of operations and finances, the potential for the Company's vaccines and proposed clinical trials.

The reader is cautioned that any such forward-looking statements are not guarantees of future performance and that actual results may differ materially from estimates in the forward-looking statements. The Company undertakes no obligation to revise these forward-looking statements to reflect events or circumstances after the date hereof.

Leader in Immunotherapy for Woman's Cancers

Addressing Significant Treatment Gap for advanced Breast and Ovarian Cancer

- Recurrence following first-line therapy – extremely poor prognosis
- Resistant to most immunotherapies (i.e. checkpoint inhibitors)

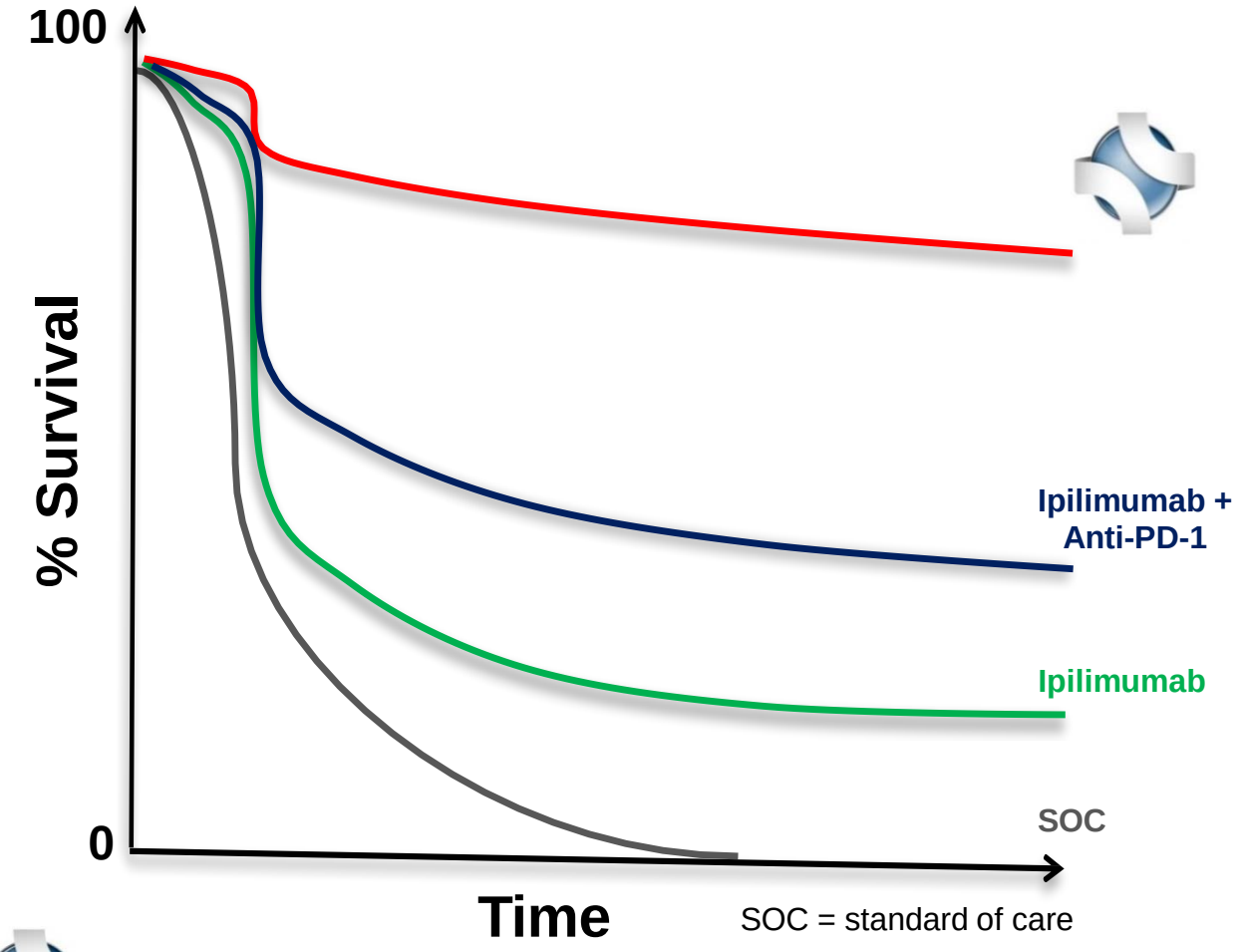
Next-generation vaccines: ideally suited to prevent recurrence; needed options for patients with refractory tumors

Substantial Opportunity to Show Clinical Benefit in Large Markets

- Ovarian Cancer: ~30,000 (newly diagnosed/year)
- Breast Cancer: 40,000 triple-negative; ~220,000 HER2/neu

Combination Immunotherapy is the Future in Oncology

TapImmune Opportunity: Unlock Promise of Immunotherapy for Certain Cancers That Do Not Respond to Checkpoint Inhibitors



Combination Therapy:

- Vaccines
- Checkpoint Inhibitors
- Adjuvants
- Oncolytic Viruses
- CAR T Cells

Checkpoint Inhibitors

Chemotherapy

Unique T-cell Vaccine Approach

Target-Driven: Does Not Rely on Exposing Neo-Antigens

- Molecules over-expressed by majority of cancer cells (90% ovarian); correlate with disease prognosis

Discovered Through Translational Medicine

- Naturally processed antigens derived from patient immune responses
- MHC class I and II antigens activate CD4+ (helper) *and* CD8+ (Killer) T cells

Elicits Durable "Memory" Anti-Tumor Response

- Long-lasting immunity against cancer
- Targets primary tumor and metastases/circulating tumor cells

Off-The-Shelf Product

- Easy, low-cost manufacturing

Leader in Immunotherapy for Woman's Cancers

Lead Vaccine Candidate in Multiple Phase 2 Clinical Studies

- Orphan Drug Designation (ovarian)
- FDA Fast Track (platinum-sensitive ovarian)
- ~$17 million in non-dilutive funding for breast cancer (TNBC, DCIS)

Collaborations with industry and clinical leaders:

MAYO CLINIC

AstraZeneca

Memorial Sloan Kettering Cancer Center

DEPARTMENT OF DEFENSE · UNITED STATES OF AMERICA

Why Invest in TapImmune Now?

- ✓ Potential to be **dominant player** in T-cell cancer vaccines
- ✓ Multiple Phase 2 studies with several **near- and mid-term inflection points**
  - FDA Fast Track, Orphan Disease Status
- ✓ **Highly vetted technology**: Mayo Clinic, AstraZeneca, MSKCC, U.S. DoD
- ✓ Compelling Phase 1 data: **durable immune responses** against target cancers
- ✓ **Capital efficient** clinical development strategy
  - ~17 million in non-dilutive grants fully funds two studies
- ✓ PolyStart™ technology offers **near-term out-licensing opportunities**
- ✓ **Experienced management** and advisory team

2017 Clinical Milestones

TPIV 200:

- 3Q: Report long-term survival and immune response data from Phase 1
- 4Q: Complete interim analysis: Phase 2 ovarian combo study with AZ
- 4Q: Complete recruitment: Phase 2 triple-negative breast dosing study

TPIV 100/110:

- Initiate Phase 1b/2 HER2/neu+ breast cancer study
- Initiate Phase 1b/2 HER2/neu+ DCIS study

Mid-Stage Pipeline - Multiple Shots on Goal

Indication		Preclin.	Phase 1	Phase 2	Phase 3	Sponsors/ Collaborators
TPIV 200: Folate Receptor-Alpha						
Ovarian Cancer ★	Platinum-Resistant	Enrolling				AstraZeneca, Memorial Sloan Kettering Cancer Center
	Platinum-Sensitive	Enrolling ✸				TapImmune
Triple-Negative Breast Cancer	Dosing Study	Enrolling				TapImmune
	Full Trial N=280	2017 Start				MAYO CLINIC, DoD — Fully Funded
TPIV 100/110: HER2/neu						
HER2/neu+ Breast Cancers	HER2/neu+ Breast	2017 IND*				TapImmune
	HER2/neu+ DCIS	2017 Start				MAYO CLINIC, DoD — Fully Funded

★ Orphan Drug Designation ✸ FDA Fast Track

*Amended IND includes additional MHC Class I peptide

TPIV-200
Phase 2 Studies

Targeting advanced / refractory tumors

Novel combination study with Astra Zeneca

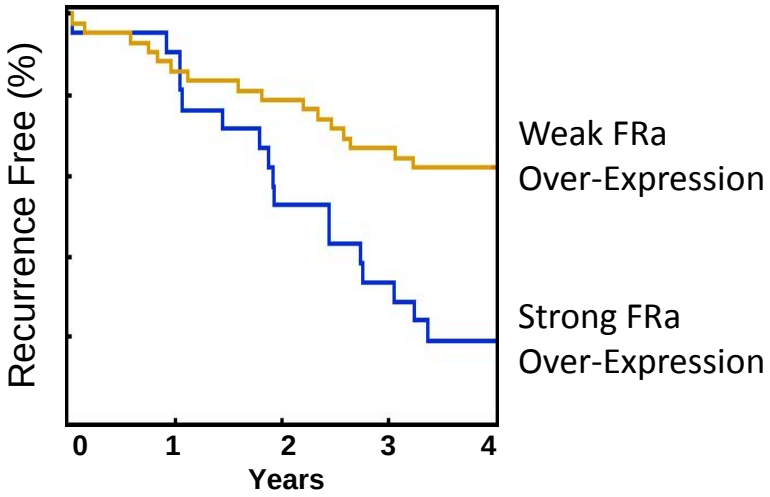
$13 million non-dilutive funding for large TNBC study

Vaccine Target is Highly Expressed and Associated with Recurrence

Target: Folate Receptor Alpha (FRa)

FRa Overexpressed By:

- ~90% of ovarian cancer cells
- >80% of TNBC breast cancers cells
- 80% of NSCLC cells
- Associated with cancer recurrence



Cancer Patients Develop Spontaneous Immunity Against FRa

- Source of human-derived anti-tumor epitopes
- Driving factor for checkpoint inhibitor combinations

TPIV 200 – Multi-Antigen Vaccine Composition

- Five Class II peptides with embedded Class I
- Four T-cell epitopes, one antibody epitope
- Cover ~85% of human genotypes worldwide

Hartmann et al. Int J Cancer 2007; 121:938-42

TPIV 200 – Phase 1 Results

Patient Profile

- Advanced ovarian and breast cancer patients
- Completed systemic chemotherapy and/or radiation

MAYO CLINIC

Highly Encouraging Safety and Immunogenicity Results

- Vaccine safe and well tolerated
- **95%** evaluable patients generated robust T-cell responses
- **100%** demonstrated T-cell responses lasting >6 months
- Results published (ASCO 2015)

Led to Significant Collaborations for Phase 2 Studies

12-Month PFS/OS and Immune Response Data Expected 3Q17

Phase 2 Study: TPIV 200 + Durvalumab

Needed Option For Advanced Ovarian Cancer Patients

Sponsor: MSKCC

AstraZeneca

<u>Currently Enrolling</u> Platinum-Resistant Ovarian Cancer Patients

- Disease progression during or within six months of completing platinum-based therapy
- Very poor prognosis due to lack of effective treatments
- Sponsored by Memorial Sloan Kettering; enrolling at seven clinical sites

Study Highlights:

- First study to evaluate combination of cancer vaccine with a checkpoint inhibitor
- First opportunity to see Phase 2 immunogenicity/tumor response data for TPIV-200
- Potential breakthrough therapy if effective in this difficult patient population
- >50% enrolled; Interim analysis expected in 4Q 2017 based on 27 completed patients

Primary Endpoint: Overall Response Rate (RECIST*)

***** Pre-defined deviations from RECIST will be permitted to allow select patients deemed to be benefitting from treatment to receive continued therapy

Phase 2 Study: TPIV 200 Maintenance Therapy

Preventing Recurrent Disease After Successful Platinum Therapy

Sponsor: TapImmune

<u>Currently Enrolling</u> Platinum-Sensitive, Recurrent Ovarian Cancer Patients:

- Confirmed response (CR/PR or SD) to platinum therapy followed by disease progression
- At risk of second recurrence after successful round of platinum therapy
- Opportunity to target persisting tumor cells while disease burden is low

Study Highlights:

- Randomized, blinded study comparing TPIV-200 + adjuvant (GM-CSF) to adjuvant alone
- FDA Fast Track: Potentially enables this study to count as pivotal
- Orphan Drug Designation: Potential for additional five years of market exclusivity

Primary Endpoint: Time to Disease Recurrence (RECIST)

Phase 2 Study: TPIV 200 Dosing for Triple-Negative Breast Cancer

Determine Vaccine Dosing/Regimen to Maximize Immune Response

Sponsor: TapImmune

<u>Currently Enrolling</u> Advanced Triple-Negative Breast Cancer Patients

- Stage IIb-III patients, no metastases
- Completed surgery and radio/chemotherapy; Prior to first recurrence

Study Highlights:

- Four-arm study to evaluate two different TPIV 200 doses with or without immune priming with cyclophosphamide
- Patients receive booster vaccine every six months without progression
- Positive DSMB recommendation after 25%; full enrollment by year end 2017
- Interim analysis of safety 4Q 2017

Primary Endpoint: Immune response (Anti-FRa T- and B-cells)

Phase 2 Study: TPIV 200 Efficacy for Triple-Negative Breast Cancer

Large Study to Determine Efficacy of Vaccine in Prolonging Disease-Free Survival

Sponsor: Mayo Clinic

To Enroll Triple-Negative Breast Cancer Patients

- Stage Ib-IV patients
- Completed surgery and radio/chemotherapy; Prior to first recurrence

Study Highlights:

- Fully Funded by ~$13 million grant from U.S. Department of Defense
- Large (280-patient), randomized, blinded, controlled multi-center study (~5 years)
- Compares TPIV-200 + adjuvant (GM-CSF) to adjuvant alone, with immune priming using cyclophosphamide
- Anticipated to start in 2017

Primary Endpoint: Disease-Free Survival

TPIV 100/110

Targets HER2/neu+ breast cancer

Significant potential compared to Herceptin

Two clinical studies planned to start in 2017

Phase 1b/2 study fully funded by U.S. Dept. of Defense

TPIV 100/110 Overview and Clinical Strategy

TPIV 100: Four Class II antigens targeting HER2/neu
TPIV 110: Four Class II antigens plus One Class I antigen

- Overexpressed in ~30% breast cancer patients
- 220,000 cases per year

Unmatched potential for treating HER2/neu (vs. Herceptin, others)

- May cover significantly larger patient population (up to 90% vs. 15-20%)
- May remain effective for significantly longer
- Published data show five-fold greater potency vs. development-stage Neuvax

Robust T-cell responses against TPIV 100 generated in Phase 1

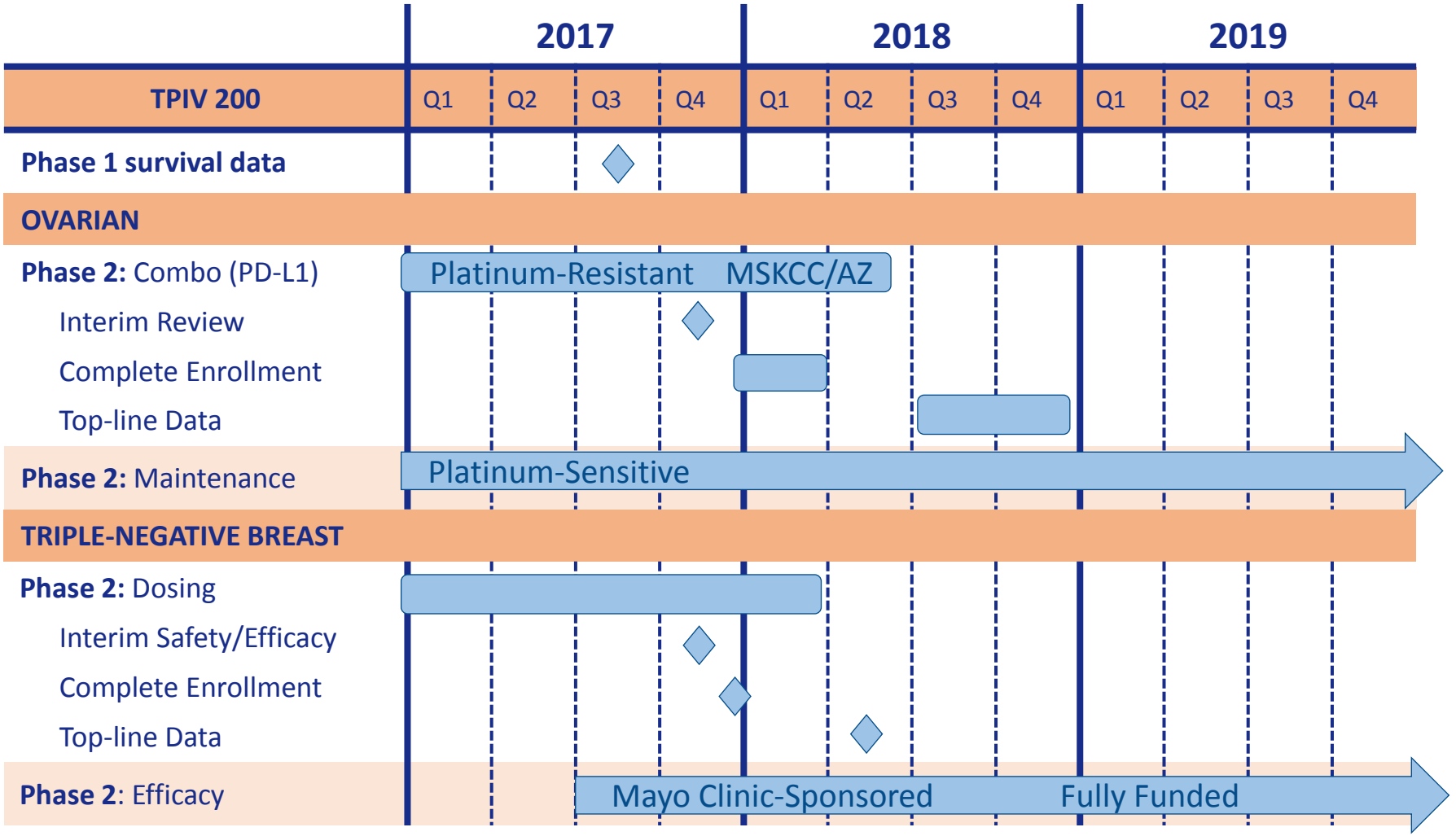
- **95%** patients responded to two antigens; **75%** responded to four antigens

Clinical Studies:

Sponsor	Collaborators	N	Status	Indication	Design
TapImmune	n/a	TBD	Planned 2017 start	Breast Cancer	Phase 1b/2a
MAYO CLINIC	TapImmune, Department of Defense	TBD	2017 start*	DCIS Breast Cancer	Phase 1b/2a

* Fully Funded by U.S. Dept. of Defense Grant - ~$4 million

Anticipated Development Plan & Milestones: TPIV 200



PolyStart™

Significant Out-Licensing Opportunity

Proprietary Technology Invented and Owned by TPIV

Enhances Antigen Expression for DNA-based Vaccines

PolyStart™ - Proprietary Protein Expression System

Enhanced Antigen Expression

Increased Antigen Presentation

Enhanced Immune Response

- **Driving incremental value for TapImmune**
  - High potential to monetize via out-license to partners
- **Modular & Versatile: Readily adapted for multiple applications**
  - Enhanced expression of self-antigens and neo-antigens in cancer
- **Advancing in preclinical studies**
  - Recent patent approvals
  - New constructs for breast and ovarian cancer synthesized

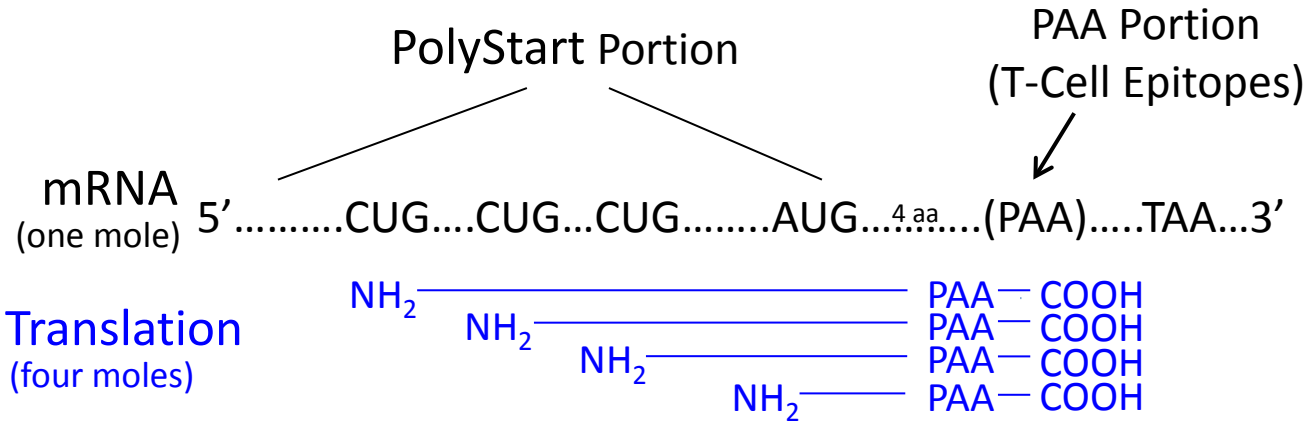
PolyStart™ and Poly-Antigen Array (PAA)

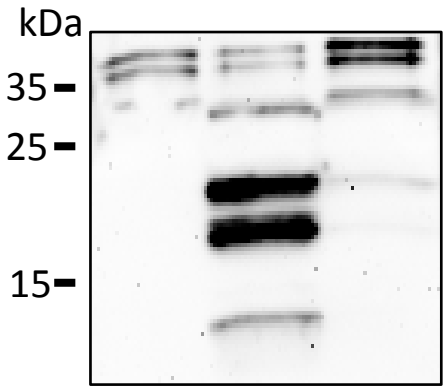
Antigen expression is a key component DNA-based vaccines

…but protein expression is variable to poor

Currently : 1 DNA ➡ 1 RNA ➡ **1 Protein**

PolyStart : 1 DNA + PolyStart™ ➡ **<u>4 or more Proteins</u>**





Modular Design: PAA portion designed for rapid, straight forward replacement

Experienced Management Team

Glynn Wilson, Ph.D.
Founder, Chairman & CEO

- Extensive track record of success in corporate management and product development at major multinational pharmaceutical companies and startups. Former Worldwide Head of Drug Delivery at SmithKline Beecham and Research Area Head in Advanced Drug Delivery at Ciba-Geigy.

Richard Kenney, MD, FACP
Consultant Medical Director

- Extensive experience in leading clinical development operations in immunotherapy. Formerly Chief Medical Officer, at Immune Design Corporation, and Crucell, Holland; Senior VP, Clinical Development at Vical and Sr Director, Global Clinical R&D for vaccines for viral disease at GlaxoSmithKline.

Michael Loiacono
CFO & Chief Accounting Officer

- 25 plus years of financial management experience and executive roles in private and publicly traded organizations such as Global Axcess.

Robert Florkiewicz, Ph.D.
Director of Research

- Extensive experience in molecular biology research and intellectual property development at Scripps Institute, Synergen, ID Bio Medical and Seed Intellectual Law Group.

Elizabeth Donnelly
Director of Administration

- 20 years of experience in Human Resources and Administration with APL Logistics, System Designs, Ability Network, and Interline Brands.

Medical and Scientific Advisors

Keith Knutson, Ph.D.

- Director, Immunotherapy and Cancer Vaccine Program, Mayo Clinic, Jacksonville, FL
- Discoverer of current HER2/neu and FRA peptide antigens

Edith A. Perez, M.D.

- Deputy Director at Large for Mayo Clinic Cancer Center in Jacksonville, FL
- Professor at Mayo Clinic College of Medicine and Chair of the Mayo Clinic Breast Cancer Translational Genomics Program

Mark Pegram, M.D.

- Director of the Breast Cancer Oncology Program at Stanford Women's Cancer Center
- Co-director of Stanford's Molecular Therapeutics Program

Clinical and Partnership Strategies in 2017

Strategic Initiative	Status
Complete Phase 2 proof-of-concept studies	Multiple studies enrolling patients in major indications
Explore combination regimens	Phase 2 ongoing: TPIV 200 + AZ's anti-PD-L1 Interim data in 2Q 2017
Seek to monetize PolyStart™ expression platform	Seeking collaborations in viral disease and cancer
Seek Pharma/Biotech partners for late-stage development and commercialization	Ongoing; Preliminary discussions
Seek synergistic technologies for acquisition, licensing or joint R&D, e.g. antigens; checkpoint inhibitors	Focusing on cancer immunity cycle and women's cancers

Equity Overview

Capital Structure

Shares Outstanding	8.4M
Public Float	6.7M
Market cap	$35M (04/27/17)
Stock Price	$4.17 (04/27/17)
Volume (3m):	~40 K

2016 Financing

Warrant exercise ($6.0M)

Private Placement ($3.1M)

TapImmune trades on NASDAQ (TPIV)

CONTACT:

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Chief Executive Officer

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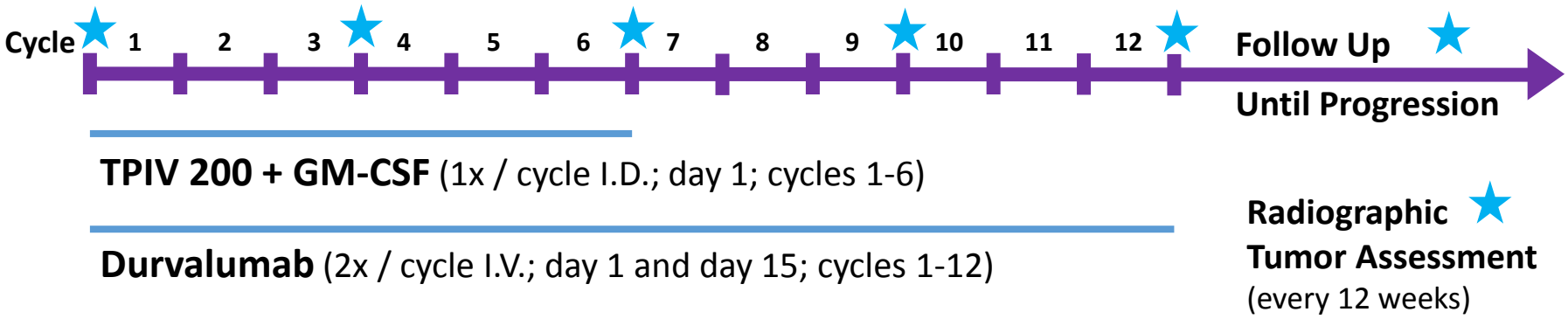
TAPIMMUNE

NASDAQ: TPIV

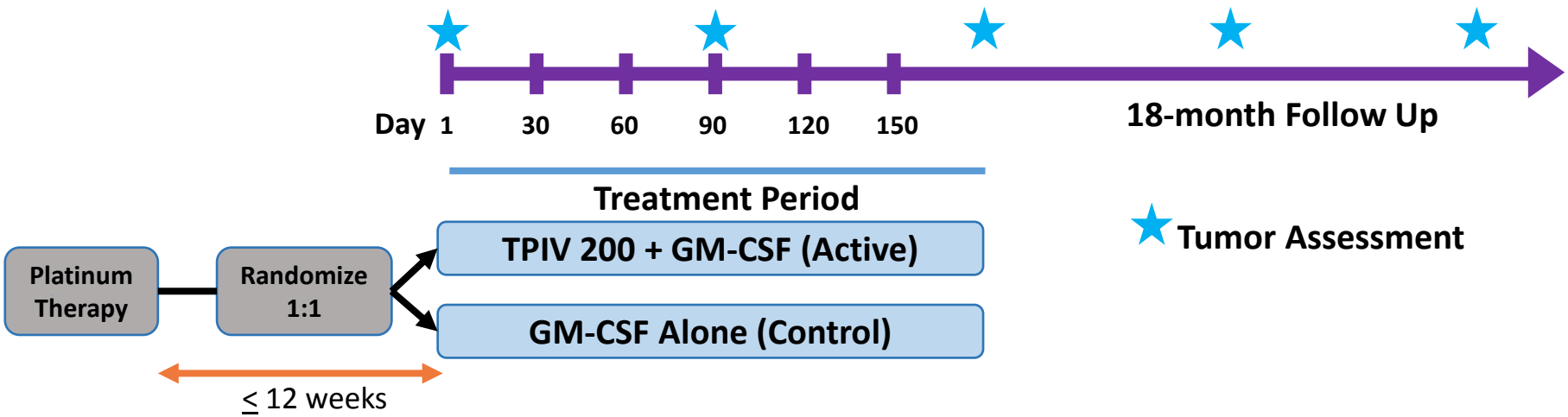
Appendix

Study Design: TPIV 200 + Durvalumab



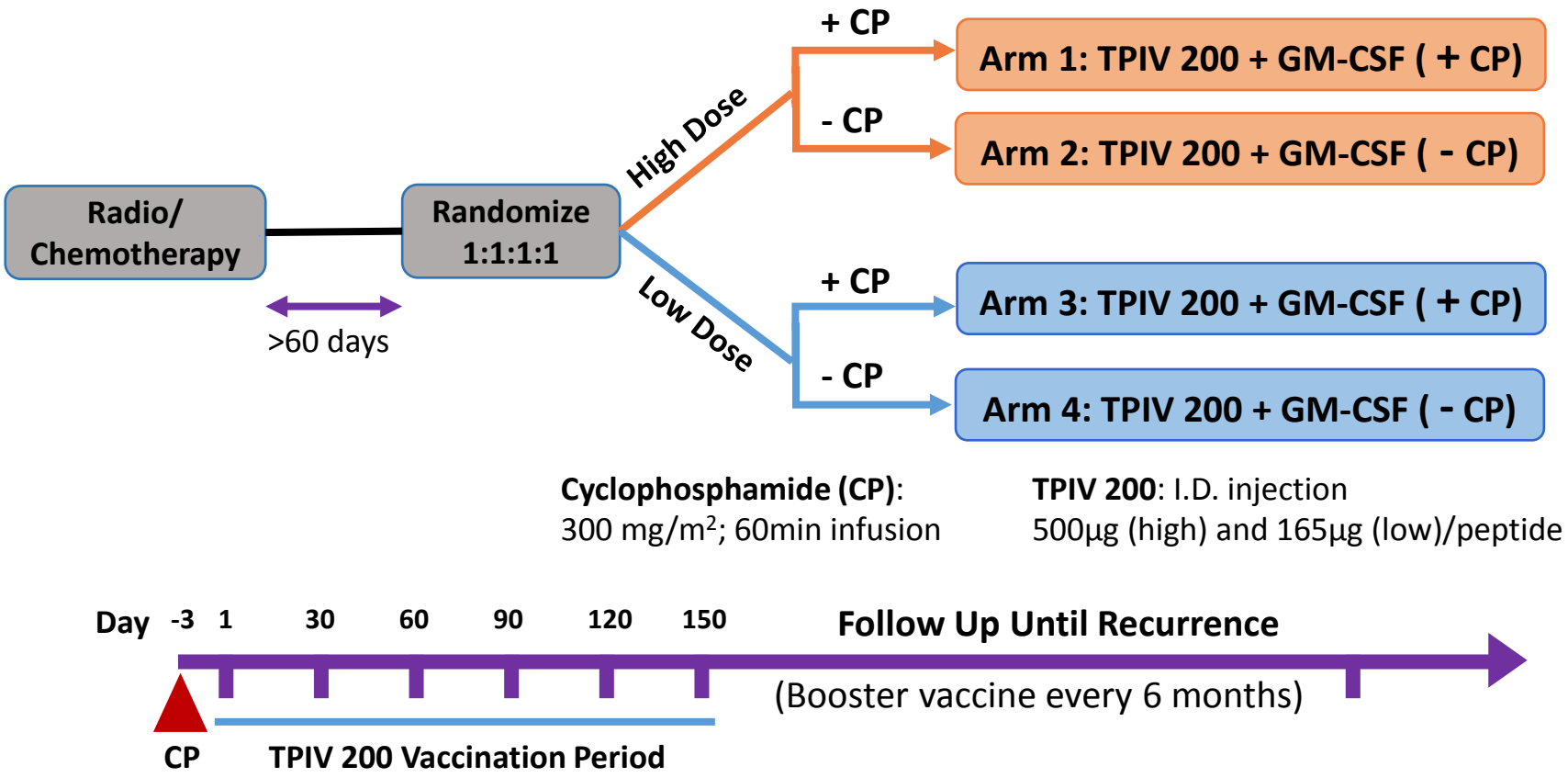
- **Design:** Phase 2, open-label, single-arm, multi-center
- **Patients:** 40
- **Treatment:**
  - **TPIV-200:** 6 monthly vaccinations (intradermal injection)
  - **Checkpoint Inhibitor:** 24 bi-monthly infusions
- **Tumor Assessment:** Radiographic, every 12 weeks until progression
- **Interim Analysis:** After 27 patients complete the study; enrollment resumes upon favorable results

Study Design: TPIV 200 Maintenance Therapy



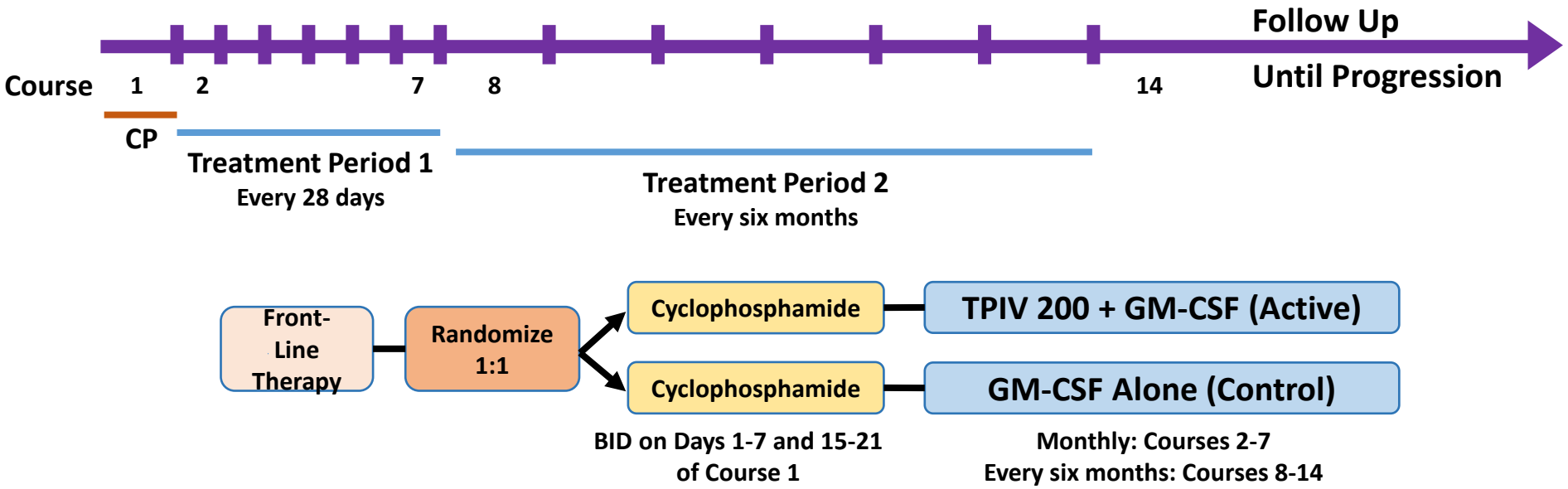
- **Design:** Phase 2, randomized, blinded, controlled, multi-center (up to 15 clinical sites)
- **Patients:** 100 total (increased from 80 to enhance statistical powering)
- **Treatment Arms:**
  - Active: TPIV-200 + GM-CSF; six monthly vaccinations (intradermal injection)
  - Control: GM-CSF alone; six monthly injections
- **Tumor Assessment:** Radiographic, every 12 weeks until progression
- **Interim Analysis: 2018**

Study Design: TPIV 200 for Triple-Negative Breast - Dosing



- **Design:** Phase 2, randomized, blinded, multi-center (enrolling at 12 clinical sites)
- **Patients:** 80 total; 20 per study arm
- **Treatments:** TPIV 200 (Low/High dose) + GM-CSF; 6 monthly vaccinations
  Cyclophosphamide (+/-); 3 days prior to vaccination

Study Design: TPIV 200 for Triple-Negative Breast - Efficacy



- **Design:** Phase 2, randomized, blinded, controlled, multi-center
- **Patients:** 280
- **Treatment Arms:**
  - Active: TPIV-200 + GM-CSF; 6 monthly vaccinations (intradermal injection)
  - Control: GM-CSF alone; 6 monthly injections
  - Both arms: Immune priming with cyclophosphamide (CP) during Course 1 only